Survival analysis is a collection of statistical tools that were developed to assist with mortality studies. A common feature of these survival analysis tools is the ability to include censored data, data from people who drop out during the study. These tools allow you to use the information from these censored observations to help estimate survival probabilities up to and including the day that they dropped out. Although survival models were originally developed for mortality events, you can adapt them to many other outcomes, such as customer churn, restaurant closings, defoliation of plants, and metal fatigue. The outcomes do not necessarily have to be “bad” events. Survival analysis is also useful for successful completion of training for guide dogs and time to pregnancy in couples with fertility problems.

In this talk you will see a variety of Kaplan-Meier curves, the fundamental graphical display for survival data and learn how to interpret these curves. You’ll also see the underlying calculations of a Kaplan-Meier curve and an advanced application of competing risks analysis using a Political Science example of duration of leadership in the world’s countries.

Notes to myself:

Guide dog study: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5532385/>

Metal fatigue: Application of Kaplan-Meier analysis in reliability evaluation of products cast from aluminium alloys. J. Szymszala, A. Giereka, J. Kliśb.